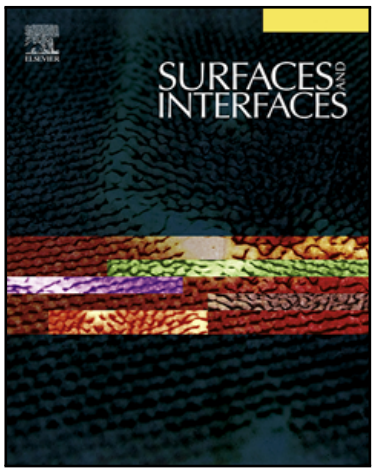

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Sb_2S_3 single crystal nanowires with comparable electrochemical properties as an anode for sodium ion batteries

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Abstract

Single crystal Sb_2S_3 nanowires are synthesized successfully through a simple one-step hydrothermal method. The morphological and structural characterizations reveal the uniform nanowire morphology of single crystal Sb_2S_3 with orthorhombic structure. The Sb_2S_3 nanowires exhibit a relatively high reversible capacity of 579 mAh g^{-1} at a current density of 100 mA g^{-1} and good cycling stability with 80.5% capacity retention after 50 cycles. The good rate capability of the Sb_2S_3 nanowires is also demonstrated by discharge/charge tests. The comparative study of electrochemical performance is made for two kinds of electrodes with different conductive additive contents. Sb_2S_3 nanowires electrodes with 20% acetylene black